

C2

--As battery chargers are typically designed without regard for efficiency, the heat generated via low-efficiency chargers can present a problem. For those applications, the chargers shown in **FIGS. 5A-5B** delivers **2.5 A** with efficiency as high as **96** percent. **IC1** is a buck-mode switching regulator that controls the external power switch **Q1** including the synchronous rectifier. **IC1** includes a charge pump for thus, generating the positive gate-drive voltage, however required by **Q1**. The battery-charging current having a voltage across the **25-M** resistor (**R3**), which is amplified by the op amp and defined, as positive-voltage feedback to **IC1**. This feedback empowers the chip to maintain the charging current at **2.5 A**. **While charging, these two circuits H3-H4 can provide current to a separate load**, up to a limit, thus set by current-sense transformer **T1**, and sense resistor **R1**. **T1**, thereby improves efficiency by lowering power dissipation in **R1**. Seeing that the transformer turns ratio (**1:70**), and routes, only **1/70** of the total battery-plus-load current via **R1**, generates a feedback voltage, which enables **IC1** to limit the overall current to a level compatible therewith the external components. As shown in **FIG. 4A**, a block diagram of a **PE** model is clear, which was requested via the **PTO**, such, as to demonstrate its operability. The chargers **H3-H4** are connected to each other via the converters **V3-V4**, whereby two leads proceed from the charger **H3**, and is connected to the converter **V3**. While two leads proceed from the charger **H4**, both leads each of which, consequently, is connected with respect to the converter **V4**. Seeing that a lead proceeds from the adapter **A3**, and is connected using the charger jack 2, a lead proceeds from the adapter **A4**, and is connected by way of the charger jack 3.--

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

Paragraph beginning at line 38 of page 3 has been amended as follows:

FIG. 4 is a perspective view via a bridge with bases on each side of a river, and has two self chargeable batteries;

FIG. 5 is a perspective view of a portion of the bridge adjacent the two battery chargers and their spiraled lights;

Paragraph beginning at line 8 of page 7 has been amended, as follows: Whereby submitted on 12/27/2001.

As shown in FIGS. 5A-5B, the chargers H3-H4 produces current by a controller IC1, a power switch Q1 and a rectifier Q2.

A transformer T1 saves power about Q1's current through R1, as current of an amplifier IC2 flows internally from Rs+ to RS- and through R2 to generate a feedback signal for IC1. As shown in **FIG. 4A**, a block diagram of a model is provided, which was requested via the **PTO**, such, as to demonstrate its operability. The chargers **H3-H4** are connected to each other via the converters **V3-V4**, whereby two leads proceed from the charger **H3**, and is connected to the converter **V3**. While two leads proceed from the charger **H4**, both leads each of which, consequently, is connected with respect to the converter **V4**.

Seeing that a lead proceeds from the adapter **A3**, and is connected using the charger jack 2, a lead proceeds from the adapter **A4**, and is connected by way of the charger jack 3.--

Paragraph beginning at line 8 of page 7 has been amended, as follows: Whereby submitted on 03/21/2002.

--As shown via FIGS. 5A-5B, both chargers H3-H4 produces current by a controller IC1, one power switch Q1 and a synchronous rectifier. While charging, these chargers H3-H4 can supply current to any separate load up to a limit set by current-sense transformer T1, and sense resistor R1. T1 improves efficiency by lowering power dissipation in R1, i.e., turning ratio (1:70) via the total battery-plus-load current